Today's Topics:
  Do shielded cables on computers reduce static risk as well as RFI?
               Shortwave jammers identified - repost

Date: 5 Dec 89 01:29:34 GMT
From: philmtl!philabs!briar.philips.com!rfc@uunet.uu.net (Robert Casey;6282;3.57;$0201)
Subject: Do shielded cables on computers reduce static risk as well as RFI?
Message-ID: <69679@philabs.Philips.Com>

Just wondering, would using shielded cables on your computer help protect it from static discharges from your body during the winter? Assuming that you discharge to the cable. Seems to me that you'd discharge to ground, as there's nothing else exposed, like signal wires, in this case. And you wouldn't blow up some chip that's connected to those wires.
Of course, you still could discharge into your keyboard and kill things.

Is using shielded cables for this static protection purpose worthwhile?
Does it buy me extra protection?

73 de WA2ISE

Date: 5 Dec 89 02:58:10 GMT
From: att!cbnewsc!parnass@ucbvax.Berkeley.EDU (Bob Parnass, AJ9S)
Subject: Shortwave jammers identified - repost
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                SHORTWAVE JAMMERS IDENTIFIED

                    by Bob Parnass, AJ9S

   Until recently, shortwave broadcasters in the United States, the United Kingdom, Israel, and West Germany had long been subjected to intentional interference (jamming).1 Who jams shortwave broadcast stations?

   To answer this question, an intensive investigation was conducted under the auspices of the International Frequency Registration Board of the International Telecommunication Union (ITU). A 318 page report was issued after the investigation, and the highlights will interest radio enthusiasts.2

Jamming Characteristics

Foreign language programs, particularly those in languages spoken in Iron Curtain countries, are the primary targets of the jammers.

Jamming installations fall into 2 categories:

1. Ground wave jammers are used for localized jamming, directed toward the immediate vicinity (up to 100 km) of the jammer. They are situated close to the people who are to be prevented from hearing the broadcast, and are effective in blanketing high population regions with strong signals.

2. Sky wave jammers are used to prevent people far away from the jammer from hearing the targeted broadcast.

The jamming transmitters monitored in this operation were assumed to run 250 KW power and antennas with 10 dB gain. Jammers need not provide a signal with the same field strength as the broadcast signal in order to be disruptive to the the targeted transmission. By using appropriate modulation schemes, a jamming signal can obtain 10 to 15 dB relative gain compared to a broadcast signal.

Sometimes, several different jamming transmitters are used at the same time to interfere with a single broadcast frequency. About 90% of the jamming signals observed during the study were accompanied by a 2 character Morse Code identifier, which presumably allows the offender's field monitoring stations to determine the effectiveness of each jamming transmission.

Monitoring Stations

Jammers were monitored for two 3 week periods3, in a cooperative effort, by monitoring stations in West Germany, the United Kingdom, Norway, Netherlands, Israel, Canada, South Korea, Japan, and the United States.

The American locations are FCC field monitoring sites, and employ Wullenweber antenna systems. The Wullenweber system consists of 60 antenna elements (monopoles) spaced around a circle (one every 6 degrees) of 140 meters in

diameter. A rotating commutator, called a goniometer, is connected to each element through an appropriate delay line, and samples each element at a rate of several revolutions per minute.

The idea is that all signals coming from a given direction reach the receiver with the same phase, while those from other directions arrive with random phase.4 The system has the capability of sampling all or just a portion of the elements on a given pass and forms a visual 360 degree pattern on a CRT screen by comparing the signal strength of opposing elements.

The Adcock antenna, employed at many European monitoring stations, consists of two monopole sampling elements, usually about 20 feet apart. The system effectively rotates at about 20 - 30 rpm and may be controlled either manually or automatically. Automatic selection of the antenna rotation averages the signal for each pass. The time averaging continues to average each signal for as long as the device runs freely.

Findings

Radio Liberty and Radio Free Europe were jammed more than any other broadcaster observed in the operation. For all broadcasters, the Russian language and Polish language broadcasts were consistently jammed. Broadcasts in Czechoslovakian and Bulgarian languages were also frequently jammed.

The surveillance traced the source of most jamming to the USSR. Other jamming was traced to Poland, E. Germany, Romania, Hungary, Bulgaria, Yugoslavia, and Czechoslovakia.

Participating U.S. Monitoring Stations

Location	Antenna Type
Anchorage, AK	fixed monopoles with goniometer
Belfast, ME	fixed monopoles with goniometer
Douglas, AZ	fixed monopoles with goniometer
Ferndale, WA	fixed monopoles with goniometer

Ft. Lauterdale, FL	fixed monopoles with goniometer
Grand Island, NE	rotating Adcock type
Kingsville, TX	fixed monopoles with goniometer
Laurel, MD	fixed monopoles with goniometer
Livermore, CA	fixed monopoles with goniometer
Powder Springs, GA	fixed monopoles with goniometer
Sabana Seca, PR	fixed monopoles with goniometer
Waipahu, HI	fixed monopoles with goniometer

Participating Foreign Monitoring Stations

Location	Antenna Type
Ottawa, Canada	(no bearing information)
Nedhorst Den Berg, Netherlands	8 element Adcock
Norway (3 stations)	Adcock
Baldock, U.K.	fixed monopoles with goniometer
Crowsley Park, U.K.	(bandwidth measurement only)
Seoul, S. Korea	log periodic
Osaka, Japan	circular array of monopoles
Tokyo, Japan	8 element Adcock
Tel Aviv, Israel	unknown
Itzehoe, W. Germany	Adcock
Krefeld, W. Germany	Adcock
Berling, W. Germany	Adcock
Darmstadt, W. Germany	Adcock
Konstanz, W. Germany	Adcock
Munchen, W. Germany	Adcock (8-30 MHz only)

Jammer cw id	Jammer Location	Jammer cw id	Jammer Location
1D	USSR	KV	USSR
1G	USSR	LK	Poland/USSR
4F	USSR	LM	E.Germany
4N	USSR	M5	Yugoslavia
7K	USSR	MA	Poland
8L	E.Germany	MF	E.Germany
AD	USSR	MP	Poland
AG	USSR	MS	Czechoslovakia
AN	USSR	MU	USSR
AR	USSR	MX	Poland

AW	USSR	NS	USSR
B1	Poland	P3	Hungary
BD	Poland	PA	Poland
BG	Poland/USSR	PB	USSR
BL	USSR	PK	USSR
BQ	Poland/USSR	PL	Poland/USSR
BR	Poland	R6	Bulgaria
BU	USSR	R7	Yugoslavia
CB	USSR	R9	E.Germany/Poland
D3	Czechoslovakia	RB	USSR
DA	USSR	RT	USSR
DG	USSR	S5	Czechoslovakia
DR	USSR	ST	USSR
DU	USSR	SU	USSR
FA	USSR	TK	USSR
FG	Poland/USSR	TR	Poland/USSR
FL	USSR	TU	USSR
FU	Poland/USSR	U7	Czechoslovakia
G1	USSR	UA	USSR
G3	Bulgaria	UB	Romania/USSR
GI	USSR	UN	USSR
GJ	USSR	UQ	USSR
GM	USSR	US	USSR
GR	USSR	VF	USSR
GS	USSR	VG	USSR
HM	USSR	VN	USSR
HP	Czechoslovakia/USSR	VR	Poland/USSR
IG	USSR	W1	Czechoslovakia
IN	USSR	WA	USSR
IR	USSR	WD	USSR
K3	Hungary	WI	USSR
K7	Bulgaria	WM	USSR
K8	Hungary	WQ	Romania/Poland
KB	USSR	Z1	Czechoslovakia
KD	USSR	Z2	Yugoslavia
KF	Czechoslovakia	Z3	Czechoslovakia
KM	USSR	ZM	Poland

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1. see "Soviets Switch Jamming From BBC to Radio Liberty", in The Radio Enthusiast, May 1987.

2. Monitoring of Harmful Interference to the HF Broadcasting Service: I. Results of the October 1984 and March/April 1985 Coordinated Monitoring Periods, by M.

W. Sowers, G. R. Hand, and C. M. Rush, U.S. Department
of Commerce, NTIA, Institute for Telecommunications
Sciences. NTIA Report 85-187, December 1985.
PB86163011/AS.

3. Jammers were monitored October 1 - 21, 1984 and March 18
- April 7, 1985.

4. Electronics Engineers Handbook, 2nd Edition, pg. 25-89,
McGraw-Hill Book Co.

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